

Morgan, Lewis & Bockius LLP
502 Carnegie Center
Princeton, NJ 08540-6241
Tel. +1.609.919.6600
Fax: +1.609.919.6701
www.morganlewis.com

Morgan Lewis

A Pennsylvania Limited Liability Partnership

RANDALL B. SUNBERG
Partner-in-Charge

John McGahren
Partner
+1.609.919.6641
jmcgahren@morganlewis.com

October 9, 2015

VIA E-MAIL AND FEDERAL EXPRESS

Adalberto Bosque, PhD, MBA
Remedial Project Manager
U.S. Environmental Protection Agency
City View Plaza II - Suite 7000
48 RD, 165 Km. 1.2
Guaynabo, PR 00968-8069
bosque.adalberto@epa.gov


Re: Comments on August 2015 Superfund Program Proposed Plan for the San German
Groundwater Contamination Superfund Site OU-1

Dear Mr. Bosque:

Enclosed please find a copy of Wallace Silversmiths de Puerto Rico, Ltd.'s ("WSPRL") comments to the U.S. Environmental Protection Agency's ("EPA") August 2015 Superfund Program Proposed Plan for the San German Groundwater Contamination Superfund Site OU-1 ("Proposed Plan"). As you are aware, WSPRL timely submitted its request for a mandatory extension of the comment period in accordance with 40 CFR § 300.430.

If you have any questions regarding the enclosed, please do not hesitate to contact me at (609) 919-6641.

Sincerely,



John McGahren

Enclosures

cc: Henry Guzman, Assistant Regional Counsel (via e-mail)
Sara A. Shindel, Esq., General Counsel and Secretary (via e-mail)
David Fitzgerald, Sr. Vice President, Operations (via e-mail)

**San German Groundwater Contamination
Superfund Site (OU-1)**

Wallace Silversmiths de Puerto Rico, Ltd.

Robert M. Zoch Jr., P.E.

Comments to Proposed Plan

October 9, 2015

1.0 Introduction

United States Environmental Protection Agency (“EPA”) Region 2 announced its proposed cleanup plan for Operable Unit 1 (“OU-1”) of the San German Groundwater Contamination Superfund Site (the “Site”) on August 12, 2015, initiating a 30-day public comment period, subsequently extended to 60 days. The remedy presented in the plan proposes several simultaneous actions to address “contaminated soils and shallow, highly contaminated groundwater that acts as ongoing sources of groundwater contamination.” In addition, to address the potential for subsurface vapors to enter and affect current occupants of several industrial buildings at the Site through vapor intrusion, EPA announced that it will be using its Superfund removal or emergency response authority to perform an additional, separate response action.

The author of these comments, Robert Zoch is a chemical engineer and a registered professional engineer in Texas. Over his 45 years of professional practice, he has managed hundreds of project assignments involving environmental investigations, risk assessments, the selection and design of appropriate remedies, and their construction, operation and compliance verification for Superfund and other contaminated sites. He has performed these services for commercial and industrial clients throughout the United States, including at several locations in Puerto Rico.

These comments to the Proposed Plan and the related EPA action to address vapor intrusion are presented for consideration by EPA and are to become part of the Administrative Record for the Site on behalf of Wallace Silversmiths de Puerto Rico, Ltd. (“WSPRL”) in accordance with the extended schedule for their submission. Support information for each comment is also summarized in the following sections of this document.

2.0 Background and Comment Concerning Potential Sources of Contamination

2.1 Background – The basis for selecting and implementing a remedy for the Site under the Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA” or “Superfund”) is to address groundwater contamination that reportedly impacted a public water supply well field in southwestern Puerto Rico. Sporadic exceedances of federal drinking water standards beginning in 2001 resulted in three of the system’s water wells being taken out of service by January 2006 and listing of the “well field” Site for Superfund action in March 2008. During the interim, several commercial and industrial facilities in the vicinity were screened as potential sources of the chlorinated volatile organic compound (“CVOC”) contamination identified, and Hazard Ranking System (“HRS”) documentation was prepared to qualify the Site for action under CERCLA. The only migration pathway evaluated under the HRS protocol was groundwater, which contributed a sufficient score to qualify the Site for listing under the National Oil and Hazardous Substances Pollution Contingency Plan (“NCP”). Two potential industrial sources and the owner of the industrial park in which they operate were initially identified as potentially responsible parties (“PRPs”) under CERCLA for the groundwater contamination identified. These initial sources, referred to as the Wallace lot and CCL lot in the Proposed Plan, and the owner of the industrial park are:

- **CCL lot**–Printing label inserts for the pharmaceutical industry were reportedly produced for over 30 years at the CCL lot, and **CCL Insertco de Puerto Rico, Inc. (“CCL”)** operated as a tenant at a previous location within the same industrial park until moving to its current location around 1998. The current location was utilized by other tenants previously, including a company that contributed to confirmed groundwater contamination at another location.
- **Wallace lot** – The Wallace lot (also referred to herein as the Wallace location) includes two buildings in which a variety of table flatware and specialty products are produced by casting, rolling, stamping and finishing sterling silver and other metal alloys. WSPRL purchased

certain assets of the former operator, Wallace International de Puerto Rico, Inc. (“Wallace International”), in April 2006 and commenced manufacturing operations as a tenant at that time. The former company previously operated in the two buildings currently occupied by WSPRL, as well as in other buildings within the industrial park. WSPRL did not begin operating Wallace lot until April 27, 2006, and WSPRL is not currently, nor has it ever been, affiliated in any way with prior occupants or owners at the Wallace lot.

- **Puerto Rico Industrial Development Company (“PRIDCO”)** – The Retiro Industrial Park in San German, Puerto Rico, where the CCL and Wallace lots are located, was developed and is owned by PRIDCO. Numerous other current and former operations have been conducted by various tenants of the industrial park, beginning at least by 1956. The well field Site itself, including the three wells taken out of service, is owned by another Commonwealth entity, the Puerto Rico Aqueduct and Sewer Authority (“PRASA”), which has not been named a PRP.

2.2 Comment 1 – EPA has failed to perform a full and complete PRP search at the Site. Other tenants of the Retiro Industrial Park, including former occupants of the CCL and Wallace lots, and the owners of additional area facilities may also be PRPs for identified well field contamination.

The principal CVOC contaminants of concern (“COCs”) identified at the PRIDCO industrial park have undergone significant natural degradation and plume migration, demonstrating that releases have occurred over an extended time period. Tetrachloroethene (also known as perchloroethylene or PCE) is the source contaminant at the Wallace lot. PCE and its degradation products, all CVOCs, are the drivers of the Proposed Plan for OU-1 as it relates to the Wallace lot. WSPRL’s operations in San German did not begin until April 2006, several months after the last of the three water supply wells was closed, and WSPRL never used PCE at its manufacturing facility. Consequently, operations of prior tenants of the PRIDCO buildings currently occupied by WSPRL are responsible for the releases identified at that location.

Pursuant to EPA's own guidance on PRP Searches (PRP Search Manual (2009 edition with 2011 addendum)), "[o]ne of the primary objectives of the PRP search is to identify the **entire universe of PRPs.**" During its 2006 facility discovery initiative, the EPA site assessment team conducted reconnaissance at 44 area facilities, retaining seven existing operations as potential sources of contamination. In the summary report of this activity, it was also noted that historical operational information was not available for previous Retro Industrial Park tenants, and that not all of its buildings were even inspected. EPA did not fully research the universe of PRPs and facts associated with those 44 area facilities.

EPA recently acknowledged potential contributions of other parties to the releases or threats of releases of hazardous substances affecting the Site by issuing notice letters and/or requests for information to six companies on September 16, 2015. Given the extent and nature of the CVOC contamination at the Site, it is likely that additional private and public entities in the area may also be considered PRPs under CERCLA. Accordingly, EPA should redouble its efforts and conduct a thorough and complete PRP search according to its PRP guidance document to identify the full universe of PRPs at the Site on an ongoing basis in support of its future cost recovery efforts.

3.0 Comments Concerning Site Risk Assessments and Resulting Remedial Action Objectives

The purpose of response actions performed under CERCLA is to protect public health, welfare, and the environment from actual or threatened releases of hazardous substances. In order to evaluate risks posed by the Site, a Final Human Health Risk Assessment ("HHRA") and a Screening Level Ecological Risk Assessment ("ERA") were reported by the EPA in July 2015. The resulting Remedial Action Objectives ("RAOs") described in the Proposed Plan were based on contaminated soil, defined as principal threat waste ("PTW") that may act as a source of groundwater contamination and soil vapors. The following comments to the proposed plan are related to these issues:

3.1 Comment 2 – The risk assessments prepared to evaluate the significance of contaminant exposures are misleading and exaggerate Site risks.

The risks identified in the ERA report are primarily based upon theoretical exposures to naturally occurring metals associated with the igneous geology of the area. After documenting excessive ecological risk through several exposure mechanisms, it was concluded in the ERA that Site-related contaminants pose no risk to ecological receptors.

The HHRA also identified various risks to human health due to the presence of naturally-occurring metals including vanadium and chromium (also, all chromium was assumed to have been present in its most toxic valence state, which is virtually never the case). Future risks attributable to the presence of CVOCs in groundwater were largely based upon the assumption that the Retiro Industrial Park would become a future residential development, which is to be specifically prohibited under institutional land use controls described in the Proposed Plan.

Over six pages of the Proposed Plan are devoted to discussions of risk, much of which describes non site-related risks admittedly “overestimated” by the HHRA, or issues related to prohibited future residential exposures.

Even past levels of PCE in groundwater that resulted in closure of the Retiro water supply well reached, but did not exceed, the 5 µg/L maximum contaminant level (“MCL”) for drinking water quality, and further testing of well water samples following that peak concentration demonstrated decreasing levels. Actual risks for past exposures to Site contaminants have been minimal.

3.2 Comment 3 – Currently, the only identified source materials for potential groundwater contamination at the Wallace location consist of CVOC impacted soils within the vadose zone, predominantly at one discrete area of the property.

The purpose of the proposed remedy for OU-1 of the Site is to address soil contamination that acts as a continuing source of groundwater contamination, referred to in CERCLA practice as “source material” or “principal threats”. Data from the RI demonstrate that elevated concentrations of CVOCs in the upper seven feet of soil within two primary source areas of the Wallace lot (SA-2 and SA-3) rapidly decrease with depth to undetectable or relatively low “estimated” concentrations just above the shallow water table. Due to restriction of rainfall infiltration as a result of surface paving, CVOC source material from SA-3 has not migrated significantly to impact underlying groundwater. It

also appears likely that CVOC contamination in the deepest vadose zone soils at SA-1 has occurred as a result of vapor migration from underlying groundwater constituents, and not from a surface source.

Contaminated groundwater is generally not considered source material under CERCLA, and CVOCs do not appreciably bond to soils in the saturated zone unless non-aqueous phase liquid (“NAPL”) is present. Contaminant transport is evident within the groundwater plume and no NAPL was identified or observed during RI investigations. Therefore, the only principal threat that has been shown to exist at the Wallace location in the Retiro Industrial Park is CVOC contamination in the soil vadose zone, principally from source area SA-2, and potentially due to future contaminant migration from SA-3.

4.0 Comments Concerning the Preferred Remedy

The preferred remedy identified in the Proposed Plan includes application of three source control technologies and a fourth separate control for potential vapor intrusion. These four remedial elements identified in the proposed plan are briefly described as follows:

- **Soil Vapor Extraction (“SVE”)** – Contaminated sites with elevated levels of CVOCs in soils are frequently remediated by SVE, which involves applying a vacuum to enhance volatilization and extraction of soil contaminants, followed by their treatment or destruction in surface facilities. The technology is suited for treatment of the entire unsaturated soil column, and it can be mobilized and implemented quickly with minimal disturbance to other site operations. Some removal of high vapor pressure constituents from the soil/groundwater interface is also accomplished by SVE, especially in areas where relatively high concentrations of those constituents exist in the groundwater.
- **Dual Phase Extraction (“DPE”)** – Multi-phase extraction, frequently referred to as DPE, incorporates a high vacuum system to extract combinations of impacted groundwater, NAPL and vapors from subsurface strata. Extracted vapors and liquid phases are then separated for appropriate treatment and disposal. As such, the implementation of this technology in the

proposed plan includes permitting of a treated water discharge under Puerto Rico requirements for the resulting wastewater effluent.

- ***In situ* Treatment** – *In-situ* biological treatment by reductive dechlorination or *in-situ* chemical treatment using oxidizing agents have been successfully applied technologies for CVOC contaminated sites, with the former generally more reliable and cost effective if site conditions are favorable or can be positively manipulated to optimize degradation rates. The applicability and cost effectiveness of these techniques are highly dependent on site specific conditions.
- **Vapor Intrusion Mitigation** – Although not an element of the Proposed Plan, it anticipates that a vapor response action, such as a sub-slab mitigation system, will be implemented under other EPA authorities. Sub-slab Depressurization (“SSD”) or Sub-slab Ventilation (“SSV”) systems are frequently employed to control VOC intrusion, with the latter likely preferred in Puerto Rico due to its warm climate. Vent piping installed through the building slab with exhaust fans to ventilate areas of vapor accumulation are elements of this technology.

The following comments apply to the proposed implementation of these remedies at the Wallace location.

4.1 Comment 4 – The remedial actions proposed for SA-2 are redundant and potentially counter-productive to achieve the remediation goals of the proposed plan.

The conceptual remedy for SA-2 summarized in the proposed plan anticipates simultaneous operation of SVE and DPE systems, followed by *in-situ* treatment. Some form of active vapor intrusion mitigation would also ostensibly be initiated soon, and would continue until subsurface conditions preclude significant CVOC vapor generation and migration.

The Wallace location is underlain by a vadose zone between 14 and 30 feet thick. For this relatively thin soil column, simultaneous operation of SVE and DPE technologies is redundant since both rely on reduced pressure extraction. If a third sub-

slab vapor ventilation system were installed to address vapor intrusion, the redundancy would be further exaggerated.

Additionally, operation of a DPE system in the shallow groundwater stratum would increase the dissolved oxygen concentration of the residual groundwater due to aspiration of atmosphere air. Since subsequent *in-situ* reductive dechlorination requires anaerobic (oxygen free) conditions, the sequential implementation of these two technologies would be counter-productive. Consequently, not only is DPE not necessary for response to Site risks, its application may even preclude the successful implementation of an otherwise viable remedial option for OU-2 groundwater.

4.2 Comment 5 – The optimum methodology for CVOC remediation at SA-2 of the Wallace location is SVE.

For the same reasons SVE has been selected as the preferred technology for capturing and treating CVOC contamination at SA-1 and SA-3 of the Wallace location, SVE should be applied as the initial remedial technique for SA-2. Subject to development of design criteria during the pre-design investigation (“PDI”), a well-engineered SVE system could capture CVOC from the subsurface, extending from the groundwater/vadose zone interface to sub-slab vapor accumulation areas. Additionally, the effectiveness of SVE could be established expeditiously, well before permitting of a DPE effluent discharge could be accomplished for mobilization of that technology. Finally, utilization of SVE to remove source material from the vadose zone would allow for simultaneous pilot testing of *in-situ* groundwater treatment technologies for the elevated CVOC groundwater concentration areas of OU-2.

4.3 Comment 6 – From the limited data collected to date, reductive dechlorination appears to provide the most promising *in-situ* treatment technique for groundwater remediation.

Even with current antagonistic conditions of dissolved oxygen and low organic carbon concentrations in the shallow groundwater, reductive dechlorination of PCE is occurring as evidenced by identified decomposition products. Observed ORP data and favorable Puerto Rico weather conditions should allow conditions to be optimized for CVOC degradation in areas of highest concentration, followed by monitored natural attenuation (“MNA”) of the entire groundwater plume.

4.4 Comment 7 –WSPRL has already initiated implementation of an appropriate vapor exposure mitigation technology to protect its employees, and no additional vapor intrusion removal action is necessary.

Engineering approaches to mitigating indoor air vapor intrusion have been under development for many years to address radon and VOC exposures within residential and commercial buildings. At the Wallace location, elevated sub-slab VOC levels have been measured in the past, but no validated exceedances of OSHA’s permissible exposure limits have been identified. Nevertheless, in an abundance of caution as an industrial hygiene measure, WSPRL has implemented a vapor intrusion mitigation initiative consisting of:

- sealing entryways such as foundation cracks, utility penetrations and floor drains and applying a seal coating to the floors in its manufacturing buildings;
- increasing natural building ventilation by installing fans and opening windows; and
- verifying the effectiveness of these programs through periodic workplace VOC monitoring.

These measures have been acknowledged by the EPA as appropriate vapor intrusion mitigation strategies,¹ and they are particularly applicable to facilities enjoying the climatic conditions of southwestern Puerto Rico. In fact, these “passive” mitigation techniques are preferable to active sub-slab ventilation systems which could draw high concentration vapors under building slabs from adjacent external locations. Coupled with SVE to capture CVOC vapors from the vadose zone, this strategy will eventually eliminate the risk of vapor exposures. No further action under EPA’s removal or emergency response authorities is necessary to address vapor intrusion at the Wallace lot.

¹ U.S. Environmental Protection Agency, Engineering Issue, Indoor Air Vapor Intrusion Mitigation Approaches, EPA/600/R-08-115, October 2008.